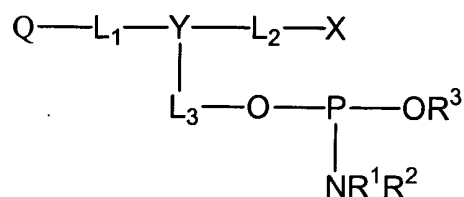


Claim 78 (new): The fluorescence quencher compound of claim 76 having the structure:



wherein:

X is an acid-labile protecting group;

R¹ and R², when taken separately, are individually selected from isopropyl, morpholino, methyl, ethyl and C₅-C₁₄ aryl, or, alternatively, when taken together with the nitrogen atom to which they are bonded, form a morpholino;

R₃ is C₁-C₆ alkyl or C₅-C₁₄ aryl; and

L₁, L₂, L₃ and Q are as previously defined.

REMARKS

I. Status Of The Claims

Claims 1-75 were originally filed. In Applicants' last response, claim 1 was amended and claims 26-75 were canceled. By the present amendment, claims 2-7, 9, 19-20 and 23-25 are amended, claims 1, 8, 10-18 and 21-22 are canceled without prejudice against their introduction in one or more timely filed related applications, and claims 76-78 are added. Accordingly, claims 2-7, 9, 19-20, 23-25 and 76-78 are presently pending and under consideration.

II. Summary And Support For Amendments

The amendments to claims 2-7, 9, 19-20 and 23-25 are primarily grammatical. Support for the claims, as amended, is found throughout the specification. More specifically, support for the amendments can be found at page 7 lines 24-28; page 8 lines 23-31; page 11: lines 26-29, page 13 lines 24-28, page 14: line 14 through page 15, and page 17 lines 10-18.

New claim 76 corresponds closely to canceled claim 1. The differences, which are mostly cosmetic, are as follows:

- The preamble now claims a "compound" rather than a "composition" to better reflect that only one compound is actually required by the claim.

- The designation "R" as used in the description of components "Y," "L₁," and "Z" has been replaced with separate designations in each description to avoid any confusion. Specifically, "R" is still used in the description of "Y," but "R⁴" is now used in the description of "L₁," and "R⁵" is now used in the description of "Z." Also, following each use of "R," "R⁴" and "R⁵," the definition of the designation is given. Note that the definitions for "R," "R⁴" and "R⁵" are the same. Accordingly, this change does not affect the scope of the claim.
- The Markush group that defines "Z" no longer includes the member "a solid support." Accordingly, dependent claims 10-17 and 21-22, which are directed to solid support embodiments, are also canceled.
- "R₁," "R₂" and "R₃" are now identified as "R¹," "R²" and "R³," respectively.
- The definitions for "R¹" and "R²" have been clarified. Specifically, "R¹" and "R²" now include within their definitions saturated rings containing up to 10 carbon atoms. Furthermore, "R¹" and "R²" together, when taken in combination with the phosphoramidite nitrogen, can form a 5 to 12 member saturated ring. Support for these changes is on page 17 lines 10-18 of the specification, wherein R¹ and R² are separately defined to include "cycloalkyl[s] containing up to 10 carbon atoms such as,

morpholino" and R¹ and R² together are defined to include "C₄-C₁₁ cycloalkyl[s], e.g. morpholino." In each case, the citation of morpholino shows that the intended rings are not restricted to hydrocarbon rings but instead include saturated rings generally. Note that in the latter case, a morpholino group is not possible without the participation of the phosphoramidite nitrogen. Accordingly, this language has been included. Also note that the presence of the phosphoramidite nitrogen causes the ring to have 5 to 12 members rather than 4 to 11 members. Support for these changes can also be found in original claim 18 which provides a substantially identical disclosure.

New claim 77 replaces canceled claim 8 and is added due to the difficulty in showing amendments to structures. The primary difference between new claim 77 and canceled claim 8 is that "R" is now identified as "R⁴," which keeps the claim consistent with new independent claim 76.

New claim 78, which replaces canceled claim 26, is also added due to the difficulty in showing amendments to structures. The difference between new claim 78 and canceled claim

26 is that "R₁," "R₂" and "R₃" are now identified as "R¹," "R²" and "R³," respectively. Once again, this keeps the claim consistent with new independent claim 76.

III. The Amended Claims Are Not Indefinite

The Office Action rejects claims 1-25 under 35 U.S.C. § 112 ¶ 2 as being allegedly indefinite. Specifically, the Office Action questions whether the definition of "R" changes as it is used in various contexts to define the moieties "Y," "L₁" and "Z" in claims 1 and 10. The meaning of "copolymers and grafts of such" in claims 12 and 16 is also questioned. This rejection is respectfully traversed as it applies to pending claims 2-7, 9, 19-20, 23-25 and 76-78 as amended.

Claim 1 has been replaced with claim 76. Although the definition of "R" remained the same throughout claim 1, the many renditions of "R" no longer exist in claim 76. Instead, claim 76 uses "R" in the definition of component "Y," "R⁴" in the definition of component L₁ and "R⁵" in the definition of component "Z." The definition for "R," "R⁴" and "R⁵" in each case is identical, *i.e.*, H, C₁-C₆ alkyl or C₅-C₁₄ aryl. The dependent claims have been amended to be consistent with this change. This change is fully supported by the specification at page 14: line 14 through the end of page 15, where "R" is first defined in the matter set forth in now cancelled claim 1 and then immediately used to define every version of "Y," "L₁" and "Z" described in the pending claims. This definition for R can also be found on page 2: line 10 and page 5: lines 3-4.

It is recognized, however, that "R" has been used in a slightly different context when describing the electron withdrawing and electron donating groups positioned off the diazo rings, as set forth in dependent claims 2 and 4. Accordingly, to avoid confusion, the "R" in claim 2 and has been amended to be "R⁶" and the "R" in claim 4 has been amended to be "R⁷." The definition of "R" (now R⁶ and R⁷) as it relates to electron withdrawing and electron donating groups is expressly defined in original claims 2 and 4 as H, C₁-C₁₂ alkyl or C₄-C₁₄ alkyl. This definition is also set forth in the discussion of suitable electron withdrawing and electron donating groups on page 13: lines 24-28 of the specification.

Claims 12 and 16 are now canceled and no similar claims have been added. Accordingly, the rejection of the phrase "copolymers and grafts of such" in claims 12 and 16 is moot.

CONCLUSION

In view of the amendments and remarks set forth above, it is respectfully submitted that this application is in condition for allowance. Accordingly, a Notice of Allowance is earnestly solicited. As always, if the Examiner has any questions, or believes that a personal or telephonic interview will expedite prosecution, the Examiner is encouraged to contact the undersigned attorney at any time.

Respectfully submitted,

03-06-03
Date

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